DOCUMENT RESUME

ED 263 085 SP 026 755

AUTHOR Chik, Azman Wan
TITLE Teacher Education and the World of Technology: Ideals and Reality.
PUB DATE Jul 85
NOTE 21p.; Paper presented at the World Assembly of the International Council on Education for Teaching (32nd, Vancouver, British Columbia, Canada, July 22-26, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Change; Foreign Countries; Higher Education; *Inservice Teacher Education; *Preservice Teacher Education; Program Development; Program Effectiveness; Research Needs; *Technological Advancement
IDENTIFIERS *Malaysia

ABSTRACT

The impact of world technology on the Malaysian education scene has been tremendous. The system of education, while trying to maintain its local cultural values, is greatly influenced by the world culture. This phenomena is also seen in its teacher education programs. But what has this impact done to the development and progress of teacher education in the country? This paper highlights: (1) teacher education programs in the country at the preservice and inservice level; (2) how much technology has influenced the education of teachers to be more effective in the classroom and achieve excellence in their performance; (3) the impact of world technology on the value-system of the country in direct relation to the goals of teacher education; and (4) the Malaysian classroom in perspective: realities and possibilities. In looking at the impact of world technology, especially technological aids to improve teaching and learning, we must be aware of: (1) the cost benefits of such aids; (2) the role of the "super-salesman"; and (3) the training of teachers to cope with the changing world of technology. This paper draws conclusions for studies made in the country on the above possibilities and suggests areas for further rethinking, research and planning. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED263085

Title of Paper: **Teacher Education and the World of Technology: Ideals and Reality**

Author: Azman Wan Chik

Designation: Assoc. Professor, Language Education and Applied Linguistics; Acting Dean, Faculty of Education, University of Malaya, Kuala Lumpur, Malaysia.

Address: Faculty of Education
University of Malaya
Kuala Lumpur, Malaysia

Telephone: (03) 572433 or (03) 567769

Telex: UNIMAL MA37453

ABSTRACT

The impact of world technology on the Malaysian education scene has been tremendous. The system of education, whilst trying to maintain its local cultural values is greatly influenced by the world culture. This phenomena is also seen in its teacher education programme. But what has this impact done to the development and progress of teacher education in the country?

This paper will highlight:

(a) Teacher education programme in the country at the pre-service and in-service level.

(b) How much has technology influenced the education of teachers to be more effective in the classroom and achieve excellence in their performance.

(c) The impact of world technology on the value-system of the country in direct relation to the goals of teacher education.

(d) The Malaysian classroom in perspective: realities and possibilities.

In looking at the impact of world technology, especially technological aids to improve teaching and learning, we must be aware of the possibilities of:

(a) The cost benefit of such aids;

(b) The role of the "Super-salesman"; and

(c) The training of teachers to cope with the changing world of technology.

This paper will draw conclusions for studies made in the country on the above possibilities and suggests areas for further rethinking, research and planning.

SP 026 755

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

H. Leavitt

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

TEACHER EDUCATION AND THE WORLD OF TECHNOLOGY:

IDEALS AND REALITY

by

Azman Wan Chik
Faculty of Education
University of Malaya
Kuala Lumpur
Malaysia

EDUCATION IN MALAYSIA: AN OVERVIEW

Structure of the School System

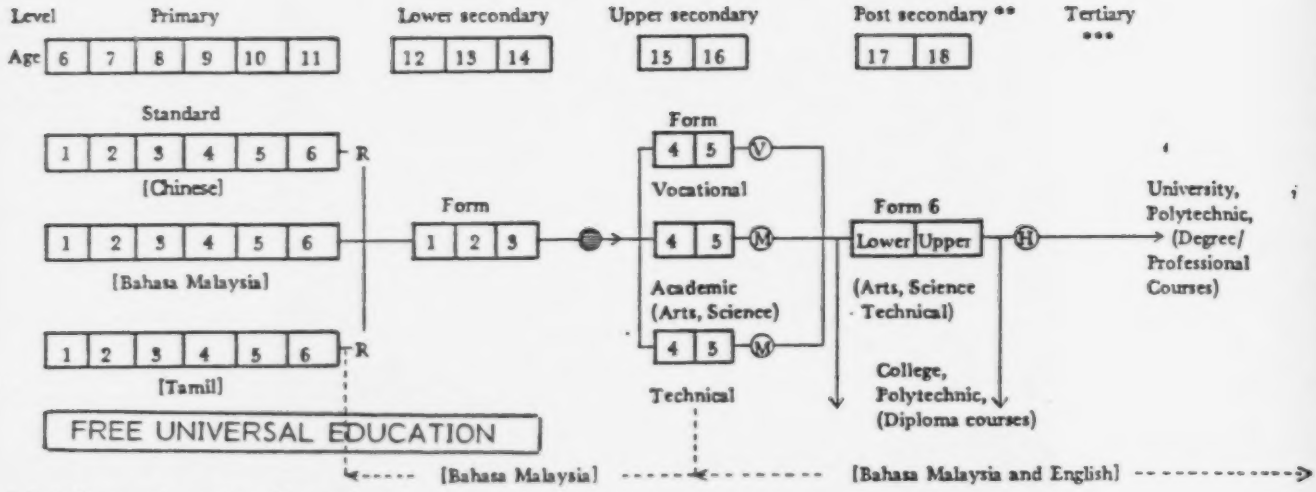
The school system consists of primary, lower secondary, upper secondary and post-secondary levels (see Figure 1). Primary level education consists of six years and begins on the average at age six plus. The lower secondary level consists of three years, and upper secondary education is two further years. In general, post-secondary education consists of two years.

At the upper secondary level, there are three streams, namely, the vocational, technical and academic streams. The academic stream is subdivided into Arts and Science streams.

The post-secondary level consists of Arts, Science and Technical streams. This level also includes teacher education colleges, polytechnics and other institutions offering Diploma courses.

At the upper secondary, 61.8 per cent of the pupils entered the Arts stream, 31.3 per cent entered the Science stream, 2.5 per cent entered the Technical stream and 4.4 per cent entered the Vocational stream. At the post-secondary level 53.1 per cent entered the Arts stream and 46.9 per cent entered the Science stream.

The transition rate from primary to lower secondary level was 87.8 per cent, from lower secondary to upper secondary level was 65.0 per cent, and from upper secondary to post-secondary level was 15.7 per cent.



[ ] Indicates main medium of instruction.

Public examination

- Lower Certificate of Education (LCE)
- (V) Malaysian Vocational Certificate (MVC)
- (M) Malaysian Certificate of Education (MCE)
- (H) Higher School Certificate (HSC)

R : Remove classes are transitional classes of one year's duration provided to give intensive language lessons to pupils who have to change their medium of learning from Chinese or Tamil at the primary level to Bahasa Malaysia at the secondary level. An extra year must be added to the ages of pupils who proceed from the Remove classes.

** Sixth Form classes, teacher training institutions, polytechnics and other institutions offering Diploma Courses.

*** Universities and other institutions offering Professional Courses.

Figure 1. School System of Malaysia

BEST COPY AVAILABLE

The Educational Setting

The educational objectives, incorporated in the National Education Policy, are spelt out as follows:

(1) To strengthen the educational system for promoting national integration through the continued implementation, in stages, of Bahasa Malaysia (the Malay language) as the medium of instruction at all levels, narrowing the gap in educational opportunities between the rich and poor, and the eventual integration of the educational systems of Sabah and Sarawak into the national system.

(2) To orientate and expand the education and training system to meet national manpower needs, especially in science and technology; and

(3) To improve the quality of education in order to reduce wastage and increase its effectiveness in nation buliding.

These objectives were spelt out to meet the national needs of the country. Malaysia is a multi-ethnic country with a population of about fourteen million. In 1980, there were about 55 per cent indigenous Malays or Bumiputras, 34 per cent Chinese, 10 per cent Indians and 1 per cent others. The population of Malaysia is still very young with 39 per cent in the age group 0 - 14 and 29 per cent in the group 15 - 29. The present development policy, with its primary focus on national unity and integration, includes the New Economic Policy with twin objectives of eradicating poverty and restructuring society to eliminate the identification of economic faction with race. Towards this end, important structural changes were achieved in the occupational patterns between 1970 - 1983. In 1970, the Malays in

Peninsular Malaysia comprised 72 per cent agricultural workers but this has fallen to 67 per cent by 1983. During the same period, the Malays in professional and technical occupations rose from 47 per cent to 55 per cent.

The implementation of the New Economic Policy is seen clearly embedded in the National Education Policy. The most significant development in the field of education is the establishment of a national system with Bahasa Malaysia as the medium of instruction. By 1982, all classes up to the upper secondary level will be evaluated in Bahasa Malaysia and by 1986 all courses up to university level will be in Bahasa Malaysia.

Measures were also taken to correct socio-ethnic imbalances in in educational opportunities. Imbalances of access to schooling had been mostly rectified by 1975 with Malays consituting 61 per cent of the enrolment at the upper secondary levels and 54 per cent at the post-secondary level. The Malay enrolment in degree courses in local universities increased from 40 per cent in 1970 to 67 per cent in 1980.

Measures to improve the quality of education included the setting up in 1973 of the Curriculum Development Center for planning and development of curricula and support materials for pupils and teachers and for the conduct of in-service teacher training courses. The Education Media Services (EMS) were expanded and a television education services introduced in 1972 in Peninsular Malaysia, and during the Third Malaysia Plan (1975-80) to Sabah and Sarawak.

The education system has been successfully oriented towards the increased output of students with a science, mathematics and technical education. Bumiputra enrolment in science courses increased substantially and by 1983 Bumiputras constituted 46 per cent of the enrolment in the science streams of the secondary schools. In 1982, a new curriculum was introduced for primary

schools (KBSR) with emphasis on the acquisition of skills in reading, writing and arithmetic.

In spite of the progress made and various innovations being tried out to improve the quality of education, the education system faced a number of problems. Regional disparities still exist in enrolment participation rates and the provision of human resources and physical facilities. The number of classrooms and schools is insufficient to meet increasing enrolment. Learning is too examination oriented and students and teachers need to rely less on textbooks and notes, and more on other educational resources to stimulate the quest for knowledge. The performance of students particularly in English and Mathematics needs to be improved. There is the shortage of teachers at the primary level and subject specialists in Bahasa Malaysia, English, Science and Mathematics at the secondary level. In-service teacher training is insufficient to meet the demands of new curricula introduced at the primary and secondary lelels. Enrolment in technical and vocational schools, polytechnics and industrial training institutes has to be increased to meet the demand for semi-professional and skilled workers in the modern sector.

Teacher Education

Pre-service

Pre-service education in Malaysia is organized at two levels, namely, the Diploma in Education and the Certificate in Education. The Diploma in Education course is available in the Faculties of Education of universities, while the Certificate in Education course is offered by the Teacher Education Division of the Ministry of Education through its teachers' colleges.

Certificate in Education. The teacher education programme for the Certificate in Education is aimed at producing qualified teachers for the

elementary level and lower secondary level in schools. This is a new three-year programme, introduced in 1981, to replace the two-year Integrated Teacher Training Programme which has been in existence in all colleges since 1973. The introduction of this innovation in the teacher education programme at this level is in keeping with the recommendations of the Cabinet Committee Report on Education (1979).

Based on the entry requirements, selected candidates are sent to one of the 26 Teachers' Colleges in Malaysia to undergo a three-year full-time teacher education programme, leading either to the Primary School Teacher Certificate or the Secondary School Teacher Certificate. Provision is made for school subject specializations within each programme.

Diploma in Education. This course is orgnaized by the universities. A candidate for the course must be a graduate of a university. The programme of studies for the Diploma in Education at the University of Malaya extends over a period of one year of full-time study, and consists of theory and practical.

In-service Education. With the introduction of curricula innovations in the various stages of education, there was a need to provide in-service education to teachers at these various levels in order to facilitate implementation. To begin with, in-service courses were conducted to familiarize teachers with the content and teaching approaches implied in the new curriculum. Participants in these initial in-service courses in turn became tutors for subsequent in-service courses. Thus the in-service courses held initially at the national level were later held at the state levels. These courses were normally held during the school holidays. Such in-service courses for teachers have been conducted for elementary teachers, teachers at the lower secondary level, teachers at the upper secondary

One of the most crucial factors that determines the success of a curriculum innovation is the ability of the teacher to implement, as closely as possible, the philosophy and objectives of the innovation in the teaching/learning situation. Undoubtedly, the one-shot type of in-service courses conducted initially following the introduction of curricula innovations is not sufficient. This points to the need to conceptualize in-service teacher education as a continuum to facilitate curriculum innovation and implementation. The introduction of a tutor's training programme in 1974 was a strategy to improve the effectiveness of the teachers' in-service courses. Such a course was held again in 1975, and in 1977, a five-year project (1977-1981) was formulated for key personnel in all school subjects. The Curriculum Development Centre was responsible for organizing and conducting these in-service courses. The aims of these in-service courses were broadened from one of merely training tutors to that of enabling them to participate actively in curricular activities at the district, state and national levels, and in professional bodies. The areas covered in these courses included:

(i) Philosophy and rationale of curricula

(ii) Teaching/learning approaches

(iii) Laboratory management and improvisation

(iv) Science terminologies in the national language

(v) In-service education

(vi) Curriculum evaluation

(vii) Classroom testing techniques, and

(viii) Current science-related social issues such as environmental pollution and energy conservation.

Thus, it can be seen that the teacher in-service education provided

is viewed as an on-going activity aimed at improving teacher incompetences in various areas.

Teacher Populaton Qualifications

With the introduction of the three-year program for pre-service teacher training, teachers at the primary level possess a minimum academic qualification of a certificate in the Malaysian Certificate of Education examination. But due to historical reasons there are teachers in primary schools with various levels of academic and professional qualifications, ranging from a minimum of six years of primary education and an ad-hoc two year part-time pre-service training to other varieties of academic and pre-service training. Of course, these serving teachers have had various forms of in-service training to keep up with new curricula change and innovations. A case in point is the recently introduced (1983) new curriculum for the primary school. All teachers at various stages of implementation have to undergo in-service training to orientate themselves to the needs of the new curriculum. There has been reactions (negative and positive) from teachers, who undoubtedly need to learn new techniques and approaches to classroom teaching. This change in the primary school curricula is part of the overall objective of improving the quality of education at all levels.

It has been the aim of the teaching profession and the Government to staff all secondary schools with graduate teachers. This is somewhat fulfilled. In general about 75 per cent of the secondary school teacher population has had university education plus teacher training. The other 25 per cent comprises of college trained teachers with the Higher Certificate of Education, and specialist teachers of various subjects.

In-service training for teachers is conducted by the Ministry of Education

and universities as need arises and is usually ad hoc in nature. Basically, these courses are conducted to improve the quality of instruction, but as yet to be seen is the formal organization of in-service education as part of life-long teacher education in the country. The Government at the present is too involved in pre-service education to be able to look seriously into in-service training of teachers. With this background, it would be of interest to look into the role of educational technology in teacher education in the country, and its place in classroom instruction.

EDUCATIONAL TECHNOLOGY IN THE SYSTEM

In looking at educational technology in teacher education and the Malaysian school system, we have to look back at the facts as outlined earlier on the Malaysian education setting. The following might summarise the background:

(a) Malaysia is a multi-ethnic society. The national language (Bahasa Malaysia) is being used as an integrating force to unite all races through the national education system. The change in the medium of instruction from English to Bahasa Malaysia has brought about new issues to be faced by the teachers.

(b) Malaysia is a developing country with its resources being divided amongst various sectors to achieve overall progress. Education shares its limited resources, and recurrent expenditure on education has remained at about 20 per cent of total recurrent expenditure.

(c) Teacher education has undergone various changes, but in-service training is sadly still on an ad-hoc basis.

BEST COPY AVAILABLE

Media Utilization in Schools

At the pre-service level, all teacher education programmes incorporate instruction in the use of educational technology for its trainees. It might be in the form of the use of audio-visual aids, media utlilization or general educational technology principles. Therefore, it is quite safe to say that all teachers at one stage or other have had instruction on the use of various aids for teaching. It is interesting to note that during training various classroom observations have shown that trainee teachers make an attempt to use aids to improve their instruction, but in the real school situation, the following study should throw some light into the situation.

A study by Tan Keng Song (1981) on "Media Utilization by English Language Teachers in Secondary Schools" highlighted the following.

(a) Visual-media utilization

TABLE 1

FREQUENCY OF VISUAL-MEDIA UTILIZATION

	Never		Occasionally		Frequently		Always			No. Media Users	
	F	%	F	%	F	%	F	%	N	F	%
Chalkboard	-	-	-	-	-	-	210	100.00	210	210	100.00
Textbooks	-	-	19	9.05	17	8.09	174	82.86	210	2.0	100.00
Objects in Class	16	7.62	43	20.47	45	21.43	106	50.48	210	194	92.38
Objects outside Class	37	17.62	61	29.04	50	23.81	62	29.53	210	173	82.38
Newspapers & Magazines	63	30.00	102	48.58	38	18.09	7	3.33	210	147	70.00
Wall Pictures	77	36.65	105	50.00	21	10.00	7	3.33	210	133	63.33
Charts	100	47.62	85	40.48	21	10.00	4	1.90	210	110	52.38
Photographs	113	53.81	83	39.53	10	4.76	4	1.90	210	97	46.19
Slides	204	97.15	6	2.85	-	-	-	-	210	6	2.85
OHP Transparencies	205	97.62	5	2.38	-	-	-	-	210	5	2.38
Film-strips	206	98.09	4	1.91	-	-	-	-	210	4	1.91

BEST COPY AVAILABLE

Table 1 shows that besides non-projected aids, which were the most frequently used media by all teachers, all the other three projected visuals listed, that is, slides, overhead projector transparencies and film-strips, were used by less than 3 per cent of the sample. 2.85 per cent of the sample made use of slides, 2.38 per cent made use of the overhead projector transparencies, and only 1.91 per cent made use of film-strips. All teachers used these media only occasionally. In another analysis, it was shown that while there existed differences between all groups in the use of visual media, the differences were not significant. What may may ascertained is that female teachers used more visual media than male teachers, that upper secondary teachers used more visual media than lower secondary teachers, that teachers with in-service training made more use of visual media than the teachers without in-service training.

(b) Audio-visual media utilization

TABLE 2

FREQUENCY OF AUDIO-VISUAL MEDIA UTILIZATION

	Never		Occasionally		Frequently		Always		N	No. Media Users	
	F	%	F	%	F	%	F	%		F	%
Slide-tape	206	98.09	4	1.91	-	-	-	-	210	4	1.91
Motion-film	208	99.05	2	0.95	-	-	-	-	210	2	0.95
Television	178	84.76	24	11.43	7	3.33	1	0.48	210	32	15.24
Language Kit	117	55.71	58	27.62	27	12.86	8	3.81	210	93	44.29

Multi-sensorial audio-visual media were not popularly used (Table 2). Less than 2 per cent of the sample made use of slide-tape presentations and the 16 mm. movie films during their English language teaching lessons. All

the 4 (1.91 per cent) users of slide-tape presentations and 2 (0.95 per cent) users of the 16 mm. movie films used them only occasionally.

Table 2 also shows that only 15.24 per cent of the total sample used the television. 11.43 per cent of the sample used the television occasionally, 3.33 per cent frequently, and 0.48 per cent always.

In another analysis, it was shown that upper secondary teachers made more use of audio-visual media than their lower secondary colleagues; graduate teachers made more use of audio-visual media than college-trained teachers; and teachers with in-service training too used more audio-visual media than the teachers without in-service training. All these differences were significant at the 0.05 per cent level.

Nature of Media Utilization

From analysis made, it has been ascertained that there was a trend for teachers to prefer certain media. Table 3 ranked the English language teachers' media preferences in terms of the number of media users for each media. The chalkboard, the teacher's voice and textbooks were the most preferred media. These were followed by the following media in descending ranks: objects in the classroom, objects outside the classroom, newspapers and magazines, wall-pictures, charts, photographs, language kits, tape-recorders, television and radio. Media which were least preferred and used were slides, overhead projector transparencies, record discs, film-strips, slide-tape presentations and 16 mm. motion films.

Table 3 shows that 40 per cent of the sample used tape-recorders. 38.1 per cent of the sample used them occasionally. This indicated that the tape-recorder is not a popular media. From another analysis, it may be noted that most teachers who used the tape-recorder, used it to teach

TABLE 3

RANKING OF MEDIA PREFERENCES BY NUMBER OF MEDIA USERS

Media Class *		Total Sample (N)	Total Media Users		Rank
			n	%	
V	Chalkboard	210	210	100.00	1
V	Teacher's Voice	210	210	100.00	1
V	Textbooks	210	210	100.00	1
V	Objects in Class	210	194	92.38	4
V	Objects outside Class	210	173	82.38	5
V	Newspapers & Magazines	210	147	70.00	6
V	Wall-pictures	210	133	63.33	7
V	Charts	210	110	52.38	8
V	Photographs	210	97	46.19	9
AV	Language Kits	210	93	44.29	10
A	Tape-recorder	210	84	40.00	11
AV	Television	210	32	15.24	12
A	Radio	210	31	14.76	13
V	Slides	210	6	2.85	14
V	OHP Transparencies	210	5	2.38	15
V	Record Discs	210	5	2.38	16
V	Film-strips	210	4	1.91	17
AV	Slide-tape	210	4	1.91	17
AV	Motion Picture (16 mm film)	210	2	0.95	19

* Media Class

A = Audio Media
V = Visual Media
AV = Audio-visual Media

songs in English (91.67 per cent of the users) and to improve pupils' reading speed (84.52 per cent of the users).

Only 15.24 per cent of the sample used television as a media for language teaching, and 11.43 per cent used it occasionally. 25 per cent of the users used television materials to create and stimulate conditions for conversation, and 15.63 per cent used television materials for composition writing in the classroom.

The radio was used by only 14.76 per cent of the sample. However, 100 per cent of the users used the radio in order to record news, stories, etc. on audio-tape to be played back to the pupils for aural training. 90.32 per cent of the users followed the Educational Radio English lesson.

Generally, with all the three media, the gorup of teachers with in-service training tend to use the aids favourably.

Factors Influencing Media Utilization

Opinions from various literature inclined towards the view that media availability and media accessibility are factors which influence the preference for and the frequency of media utilization. Attitude towards media utilization too, is another factor which influences the teachers' use of media.

Table 4 shows that there was a positive correlation of 0.283 between media utilization and media availability. This correlation was also significant at 0.01 level. Media availability had also a positive correlation of 0.498 with media accessibility and this correlation was also significant at 0.01 level.

TABLE 4

CORRELATION MATRIX: MEDIA UTILIZATION, ATTITUDE TOWARDS MEDIA UTILIZATION AND AVAILABILITY AND ACCESSIBILITY OF MEDIA

Variables	Utilization	Attitude	Availability	Accessibility
Utilization	*	0.069	0.283**	-0.192**
Attitude		*	-0.040	-0.026
Availability			*	0.498**
Accessibility				*

Sample size: 210

** Significant at 0.01 level

Media utilization had a negative correlation of -0.192, significant 0.01 level, with media accessibility.

Media utilization had a correlation of 0.069 with attitude towards media utilization. However, this correlation was not found to be significant.

Table 4 also shows that there was negative correlation of -0.040 between attitude towards media and media availability, and a negative correlation of -0.026 between attitude towards media and media accessibility. However, these correlations were found to be not significant.

It is interesting to note that out of the 210 teachers surveyed, 50.48 per cent felt that they were not trained sufficiently to handle media effectively.

In the same group, 112 teachers (32.86 per cent) had attended some form of in-service training course on the teaching of English. Table 4 shows that during the in-service courses which the 112 teachers had

attended, 69 or 61.61 per cent of these teachers were taught the use of teaching aids in language lessons. Forty-seven or 41.96 per cent of these teachers stated that they were trained in the preparation and obtaining of teaching aids, and 39 or 34.83 per cent received training to handle teaching aids and equipment.

From this study, we could see that teachers seem to shy from certain types of media. For example, the radio, which could be considered the only advanced communication technique which has found its proper place in the developing countries, has not been fully utilized by teachers. Malaysia has its own educational broadcasting unit which transmits lessons and instructions through radio and television. But these broadcasts have not been very popular with teachers and schools. Problems of time-table adjustments and physical facilities seem to be the reason or excuse. The tape-recorder, which is not only available at minimal cost and is proven to be versatile, seems not to have reached the classroom. The Government has been doing all it could to equip schools with television and radio sets. Even schools in remote rural areas have been equipped with receiving sets. According to a World Bank Report, radio coverage in Malaysia is good with about all schools able to receive broadcasts. Most schools were supplied with radio sets during the period 1975 to 1976. Only about 6 to 12 per cent of primary schools in the most rural areas of the country are outside television coverage. Secondary schools are generally located within or near towns, so virtually all of them can receive broadcasts.

Besides these facilities, the Government has been establishing educational resource centres in various parts of the country, not only to be centres for educational innovations but also to be centres for training teachers in the use of aids. But all these efforts seem not to be able to reach the teachers in schools.

WHAT NEXT?

We would agree on the effectiveness of these technological aids in helping to improve teaching and learning. The Government (however limited its resources is) spends large amounts of money to equip schools with these technological innovations. Recently, computers and its claim on the education system has reached the third world. Undoubtedly, computers are widely used (and effectively too!) for solving administrative problems, such as in school accounting, and complex problems of organization, data collection, pedagogic research, library systems, etc., but its place in the classroom as a teaching aid is still questionable. Yes, there has been research to show the effectiveness of computers in classroom situations, but by far these are limited in scope and usually address a limited audience. For schools in Malaysia (and also for most other classrooms), the effective use of computers in classroom instruction is still to be tested. But educationists do not want to be left behind. Getting on the band-wagon of the computer-assisted instruction has become the in-thing for them. A question comes to mind in this instance. If, by and large, teachers are still conservative in the use of media such as the radio, TV and tape recorders, how much could we expect of them with computers? If schools that have been given TV and radio sets do not fully utilize these facilities, would computers suffer the same fate?

Behind all these technological aids to improve classroom instruction, I fear that there is a "big hand" that tries to influence thinking in order to be given new markets for products. The school market is very extensive, and it does not take a nobel prize economist to figure that if a product gets into the school system, profit would be very huge. If we could imagine the costs of TV sets that are left idle in schools, we could see the importance

of coordinating efforts in the educational field. We should first ask the question whether teachers are properly literate to use a 'new' technological product? Will there be enough support, as far as programmes and software, to enhance the use of the machine? Will there be enough and properly trained technicians to help in the maintenance of the machines? A case in point is in a report which showed that in East Malaysia there are long delays in repair because of the problems of transportation, the cost and difficulty of obtaining spare parts, and shortage of technical staff. Equipments are left idle for lack of trained teachers to handle them.

So in trying to improve classroom instruction the solution is not just in the ability to purchase or supply any technological aid, but to ensure the adequate trianing of teachers, the proper maintenance of equipment and the extensive availability of support software materials to help the teachers. Rushing into the purchase of an aid is never wise (even though the super-salesman thinks otherwise), but looking into other dependent variables could help to save money which could be used in other traditional ways to improve classroom instruction, such as in the use of locally available aids or the improvement of teacher in-service training facilities. After all, the teacher as a human tool is still the most powerful teaching and learning aid ever developed.

Reference

1. Tan Keng Song, Media Utilization by English Language Teachers in Secondary Schools in Muar, M.Ed. thesis (unpublished), University of Malaya, Kuala Lumpur, 1981.

2. Jasbir S. Singh, Project Completion Report: Third Evaluation Project in Malaysia, World Bank Loan, 974-MA, Kuala Lumpur, Jan. 1985.

3. Leong Yin Ching, Project Completion Report: Fourth Evaluation Project in Malaysia, World Bank Loan 1329-MA, Kuala Lumpur, March 1985.

4. Faure, E., et.al., Learning to Be, UNESCO, Paris, 1972.

5. UNESCO Bulletin, Science Education In Asia and the Pacific, No. 25, June 1984, Bangkok.

6. Malaysia, Fourth Malaysia Plan 1981-1985, Kuala Lumpur: National Printing Department, 1981.

AWC/hgl

July 19, 1985